

REMARKS

Claim 1 was examined. Claim 1 is amended. Claims 33-34 are added. Claims 1 and 33-34 remain in the Application.

The Patent Office rejects claim 1 under 35 U.S.C. §112, second paragraph, as indefinite. The Patent Office also rejects claim 1 as obvious under 35 U.S.C. §103(a). Reconsideration of the pending claims is respectfully requested in view of the above amendments and the following remarks.

A. 35 U.S.C. §112, Second Paragraph: Rejection of Claim 1

The Patent Office rejects claim 1 under 35 U.S.C. §112, second paragraph, as indefinite. Specifically, the Patent Office requests clarification of the phrase "tachometer/position sensor." Applicant amends claim 1 to replace the phrase "tachometer/position sensor" with the phrase "position sensor." The Application describes that "[i]t will be appreciated by those skill in the art that the tachometer/position sensor may simply be a tachometer or a position sensor, with the speed of the reel drive shaft and its angular position being mathematically related to each other as a function of elapsed time. In addition, elapsed time and reel drive shaft's speed or angular position are mathematically related to the linear speed (e.g., at feet per second) at which the hose and drogue are being extended or retracted and their instant position, depending the particular geometry (e.g., drum and hose diameters) of the reel and hose." Page 4, lines 15-21.

Applicant respectfully requests that the Patent Office withdraw the rejection to claim 1 under 35 U.S.C. §112, second paragraph.

B. 35 U.S.C. §103(a): Rejection of Claim 1

The Patent Office rejects claim 1 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 3,674,049 of Macgregor (Macgregor) in view of U.S. Patent No. 3,008,674 of Abraham (Abraham) and U.S. Patent No. 6,241,462 of Wannasuphprasit et al. (Wannasuphprasit).

Macgregor is cited for disclosing a refilling system comprising a hose reel, a drogue, a hose reel drive system comprising a fixed displacement hydraulic motor, a microprocessor, and a tachometer.

Macgregor does not disclose a variable displacement hydraulic motor. The Patent Office relies on Abraham for such disclosure. However, like Macgregor, Abraham also teaches a fixed displacement motor. In a fixed displacement pump, flow through the pump per rotation of the pump is fixed. A variable displacement pump allows the flow to be adjustable. At page 3, line 12, Abraham describes "a variable speed hydraulic motor 30 of the positive-displacement type." "Variable speed" does not mean variable displacement. At page 2, line 8, Abraham states that "pressure applied to the hydraulic motor being varied in accordance with variations in air speed." This language indicates that this is a fixed (positive) displacement motor whose torque control is achieved by varied (controlled) pressure.

Macgregor also fails to disclose a torque sensor measuring a torque imposed on a reel. The Patent Office cites Wannasuphophrasit for teaching such a sensor for hoists and believes it would be obvious to include the torque sensor for hoists in the system of Macgregor for the advantage of preventing overload on a reel.

Claim 1 discloses an aerial refueling system including a variable displacement hydraulic motor having an electro-hydraulic control valve and an output shaft connected to a reel; a reaction torque sensor which measures the torque imposed on the reel through a drogue and a hose; a movement sensor; and a microprocessor. Claim 1 is not obvious over the cited references because the cited references fail to disclose an aerial refueling system including a variable displacement hydraulic motor having an electro-hydraulic control valve. According to this configuration the variable displacement motor can work with a fixed system pressure (e.g., 3000 PSI) and torque control is achieved by varied displacement. The displacement is controlled by the electro-hydraulic control valve.

For the above stated reasons, claim 1 is not obvious over the cited references. Applicant respectfully requests that the Patent Office withdraw the rejection to claim 1 under 35 U.S.C. §103(a).

C. New Claims 33-35

Claims 33-35 are added. Support for claims 33-35 may be found in the Application at, for example, page 6, lines 34-39 (claim 33) and page 7, lines 11-36 (claim 34). Support for claim 36 may be found in the Application at page 4, lines 15-21. Applicant respectfully requests that the Patent Office enter claims 33-35.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

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2/8/08
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